

CLAIMS

1. A method of forming an optical component, comprising:
forming a first medium on a base having one or more pockets such that the first medium is positioned over the one or more pockets; and
converting at least a portion of the first medium to a light transmitting medium.
2. The method of claim 1, wherein a portion of the base on which the first medium is formed and the first medium are constructed of the same material.
3. The method of claim 1, wherein the one or more pockets contain a medium that causes reflection of a light signal traveling through the light transmitting medium back into the light transmitting medium.
4. The method of claim 3, wherein the one or more pockets contains air.
5. The method of claim 3, wherein the first medium is formed on the base such that the medium in the one or more pockets is isolated from the atmosphere.
6. The method of claim 1, further comprising:
etching the light transmitting medium so as to define a waveguide in the light transmitting medium.
7. The method of claim 6, wherein etching the light transmitting medium so as to define the waveguide includes:
etching a ridge in the light transmitting medium.
8. The method of claim 7, wherein the ridge is formed over a pocket.

9. The method of claim 1, wherein the first medium is attached to one or more other layers of media before the first medium is bonded to the base.
10. The method of claim 9, wherein one of the one or more layers of media is constructed of the same material as the light transmitting medium.
11. The method of claim 9, further comprising:
removing at least one of the one or more other layers of media before converting the first medium to the light transmitting medium.
12. The method of claim 1, wherein all the first medium is converted to the light transmitting medium.
13. The method of claim 1, wherein all of the first medium is converted to the light transmitting medium and a portion of the base adjacent to the first medium is converted to the light transmitting medium.
14. The method of claim 1, wherein the base and the first medium are constructed of silicon.
15. The method of claim 14, wherein converting the first medium to the light transmitting medium includes converting the silicon to silica.
16. The method of claim 15, wherein converting the first medium to the light transmitting medium includes performing a thermal oxide treatment.
17. The method of claim 1, wherein forming the first medium on the base includes bonding a wafer that includes the first medium to the base.

18. The method of claim 1, further comprising:
sealing a gas in at least one of the one or more pockets from the atmosphere.
19. The method of claim 1, further comprising:
sealing a gas in at least one of the one or more pockets such that a pressure of
the sealed gas is less than 1 atm.
20. A component for formation of an optical component, comprising:
a base having one or more pockets formed in a side of the base; and
a first medium positioned over the side of the base such that the first medium
extends over the one or more pockets, a portion of the base adjacent to the first
medium and the first medium being constructed from the same material.
21. The component of claim 20, wherein a portion of the base adjacent to the first
medium and the first medium are constructed from silicon.
22. The component of claim 20, wherein the one or more pockets contains a gas.
23. The component of claim 20, wherein the one or more pockets are constructed
such that a medium in the one or more pockets is isolated from the atmosphere.
24. The component of claim 20, wherein the first medium is a light transmitting
medium.
25. The component of claim 20, wherein one or more waveguides are defined in
the first medium.

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